

**PP-62**

**Targeting Plant Pathogens Using Carbon Nanotubes**

**Mrinalini Parmar, Dhermendra Kumar Tiwari,**

M.Sc. Marine Biotechnology,(2018-2020), Goa University

Assistant Professor, Dept. of Biotechnology, Goa University

Email:mrinalini1309@gmail.com

Studies done in field of nanobiotechnology in the past decade have made immeasurable impacts and revolutionized the face of research outcomes of the whole scientific community. Nanoparticles being employed in accessing its impact on biological systems have proven to be significant tools for a variety of experiments conducted. One such form, carbon nanotubes (CNTs) have been in focus lately, experiments related to its effects on variety of biological samples have been conducted and still continue to take place.

In the series of experiments conducted by us, we targeted plant pathogenic bacteria which are potent genetic engineering tools as well, by using Multi-walled Carbon nanotubes (MWCNTs) and Single-walled Carbon nanotubes (SWCNTs). Studies have proven that carbon nanotubes have anti-microbial properties when used in significant concentrations. Our aim to access this property in lower concentrations proved to be successful. Some of biochemical tests were performed to deduce the actual effects of CNTs on bacterial cells which brings about their death. It is important to note that it is necessary if this treatment be used in-vivo plant systems to provide them resistance against these bacteria, nanotube phytotoxicity is absent. For this, the prerequisite of experiments conducted on seeds proved to be helping, as opposed to the anti-microbial activity of carbon nanotubes it has proven to show positive effect on seeds to promote germination time and growth.

**Keywords:** Nanoparticles, carbon nanotubes, plant pathogens, anti-microbial, multi-walled/single-walled carbon nanotubes, phytotoxicity.